What is claimed is:

1. A method for manufacturing a semiconductor device, the method comprising the steps of:

(a) forming an oxide film for a storage electrode on an entire surface of a semiconductor substrate comprising a cell area and a peripheral circuit area;

(b) etching the oxide film for storage electrode in the cell area to define a storage electrode area;

(c) forming a storage electrode in the storage electrode area;

(d) forming a photoresist film pattern on the oxide film for storage electrode in the peripheral circuit area;

(e) removing the oxide film for storage electrode in the cell area via a wet etching process using the photoresist film pattern as a mask, and removing the photoresist film pattern;

(f) sequentially forming a dielectric film and a plate electrode on the entire surface of the resulting structure; and

(g) forming an interlayer insulating film on the entire surface of the resulting structure.

2. The method according to claim 1, wherein step (e) comprises removing the oxide film for the storage electrode in the cell area in a BOE (Buffered Oxide Etchant) solution bath using the photoresist film pattern as a mask, and removing the photoresist film pattern of the resulting structure in a Piranha solution bath, and further comprises cleaning the resulting structure in an SC-1 solution bath and cleaning the resulting structure in a diluted HF solution bath.

3. The method according to claim 2, wherein the Piranha solution comprises H_2SO_4 and H_2O_2, the volume ratio of the H_2SO_4 to H_2O_2 ranges from 2 : 1 to 6 : 1, and has a temperature ranging from 90 to 130°C.

4. The method according to claim 2, wherein the Piranha solution comprises H_2SO_4 and H_2O_2, the volume ratio of the H_2SO_4 to H_2O_2 is 4 : 1, and has a temperature of 120°C.

5. The method according to claim 2, wherein the SC-1 solution comprises NH_4OH, H_2O_2 and H_2O, the volume ratio of the NH_4OH, H_2O_2 and H_2O ranging from 1 : 1 : 20 to 1 : 5 : 50, and has a temperature ranging from 25 to 85°C.

6. The method according to claim 2, wherein the SC-1 solution comprises NH_4OH, H_2O_2 and H_2O, the volume ratio of the NH_4OH, H_2O_2 and H_2O is 1 : 4 : 20, and has a temperature of 65°C.

7. The method according to claim 1, wherein step (e) comprises removing the oxide film for the storage electrode in the cell area in a BHF (Buffered Hydrogen Fluoride) solution bath by using the photoresist film pattern as a mask, cleaning the resulting structure in a pure water bath, and removing the photoresist film pattern of the resulting structure in a Piranha solution bath, and further comprises cleaning the resulting structure in a pure water bath, and drying the resulting structure in a dryer.

8. The method according to claim 7, wherein the Piranha solution comprises H_2SO_4 and H_2O_2, the volume ratio of the H_2SO_4 to H_2O_2 ranging from 2 : 1 to 6 : 1, and has a temperature ranging from 90 to 130°C.

9. The method according to claim 7, wherein the Piranha solution comprises H_2SO_4 and H_2O_2, the volume ratio of the H_2SO_4 to H_2O_2 is 4 : 1, and has a temperature of 120°C.

10. The method according to claim 7, further comprising cleaning the resulting structure in an SC-1 solution, and cleaning the resulting structure in a pure water bath, prior to the drying of the resulting structure in a dryer.

11. The method according to claim 7, further comprising cleaning the resulting structure in an SC-1 solution bath, cleaning the resulting structure in a pure water bath, cleaning the resulting structure in a diluted HF solution bath, and cleaning the resulting structure in a pure water bath, prior to the drying of the resulting structure in a dryer.

12. The method according to claim 7, further comprising cleaning the resulting structure in a diluted HF solution bath, cleaning the resulting structure in a pure water bath, cleaning the resulting structure in an SC-1 solution bath, and cleaning the resulting structure in a pure water bath, prior to the drying of the resulting structure in a dryer.

13. The method according to claim 10, wherein the SC-1 solution comprises NH_4OH, H_2O_2 and H_2O, the volume ratio of the NH_4OH, H_2O_2 and H_2O ranging from 1 : 1 : 20 to 1 : 5 : 50, and has a temperature ranging from 25 to 85°C.

14. The method according to claim 10, wherein the SC-1 solution comprises NH_4OH, H_2O_2 and H_2O, the volume ratio of the NH_4OH, H_2O_2 and H_2O is 1 : 4 : 20, and has a temperature of 65°C.

15. A method for manufacturing a semiconductor device, comprising:

(a) removing an oxide film for storage electrode in a cell area of a semiconductor substrate, wherein a storage electrode is disposed in the cell area, and a photoresist film pattern is disposed in peripheral circuit region of the semiconductor substrate by performing a wet etching process in a BHF (Buffered Hydrogen Fluoride) solution bath;

(b) cleaning the resulting structure in a pure water bath;

(c) removing the photoresist film pattern in a Piranha solution bath;

(d) cleaning the resulting structure in a pure water bath; and

(e) drying the resulting structure in a dryer.

16. The method according to claim 15, wherein the Piranha solution comprises H_2SO_4 and H_2O_2, the volume ratio of the H_2SO_4 to H_2O_2 ranging from 2 : 1 to 6 : 1, and has a temperature ranging from 90 to 130°C.

17. The method according to claim 15, wherein the Piranha solution comprises H_2SO_4 and H_2O_2, the volume ratio of the H_2SO_4 to H_2O_2 is 4 : 1, and has a temperature of 120°C.

18. The method according to claim 15, further comprising cleaning the resulting structure in an SC-1 solution bath, and cleaning the resulting structure in a pure water bath, prior to the drying of the resulting structure in a dryer.

19. The method according to claim 15, further comprising cleaning the resulting structure in an SC-1 solution bath, cleaning the resulting structure in a pure water bath, cleaning the resulting structure in a diluted HF solution bath, and cleaning the resulting structure in a pure water bath, prior to the drying of the resulting structure in a dryer.

20. The method according to claim 15, further comprising cleaning the resulting structure in a diluted HF solution bath, cleaning the resulting structure in a pure water bath, cleaning the resulting structure in an SC-1 solution bath, and cleaning the resulting structure in a pure water bath, prior to the drying of the resulting structure in a dryer.

21. The method according to claim 18, wherein the SC-1 solution comprises NH_4OH, H_2O_2 and H_2O, the volume ratio of the NH_4OH, H_2O_2 and H_2O ranging from 1 : 1 : 20 to 1 : 5 : 50, and has a temperature ranging from 25 to 85°C.

22. The method according to claim 18, wherein the SC-1 solution comprises NH_4OH, H_2O_2 and H_2O, the volume ratio of the NH_4OH, H_2O_2 and H_2O is 1 : 4 : 20, and has a temperature of 65°C.